

## REMARKS

In view of the foregoing amendments and following discussion, reconsideration is respectfully requested.

Claims 1-27 were rejected under 35 U.S.C. §112, first paragraph for the reasons set forth in numbered paragraphs 3-5 on pages 2-3 of the Official Action. Although Applicants do not acquiesce in the rejection, for purposes of expediting prosecution Claims 1-18 and Claims 26-27 have been cancelled and "boron-free" has been deleted in Claim 19 thereby obviating the rejection.

Claims 1-27 were rejected under 35 U.S.C. §112, second paragraph for the reasons set forth in numbered paragraphs 7-9 on page 3 of the Official Action. Although Applicants do not acquiesce in the rejection, for purposes of expediting prosecution Claims 1-18 and Claims 26-27 have been cancelled and Claim 21 has been amended as suggested in the Official Action thereby obviating the rejection. As for Claim 22, Claim 22 has been amended to change "that desired for" in line 2 to --the hardness of-- and "desired" has been deleted in line 3 thereby obviating the rejection.

Claims 23 and 24 were objected to for the reasons set forth in numbered paragraph 10, on page 3 of the Official Action. Although Applicants do not acquiesce in the rejection, for purposes of expediting prosecution Claims 23 and 24 have been amended as suggested in the Official Action thereby obviating the rejection.

Claims 1-18 and 26 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Japanese Patent 2003-3234 ("Japan '234") and Claim 27 was rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Japan '234

and further in view of U.S. Patent No. 5,645,794 ("Beguinot '794"). The reasons for the rejections are set forth in numbered paragraphs 14-17 on pages 4-5 of the Official Action. Although Applicants do not acquiesce in the rejections, for purposes of expediting prosecution Claims 1-18 and Claims 26-27 have been cancelled thereby obviating these rejections.

Claims 1-27 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Beguinot '794 or U.S. Patent No. 5,855,846 ("Beguinot '846") in view of U.S. Patent No. 6,045,633 ("Henn"). The reasons for the rejections are set forth in numbered paragraphs 19-26 on pages 5-7 of the Official Action.

Claim 19 recites a process for manufacturing a hot rolled and tempered plastic mold tool from a tool steel alloy, the process consisting essentially of the steps of: shaping the tool steel alloy by hot rolling into a hot rolled plate using a hot rolling mill; hot leveling the hot rolled plate while the hot rolled plate is still on the hot rolling mill; cooling the hot leveled plate by free air cooling to a temperature below about 600 ° F.; tempering the air cooled plate to a hardness in the range of from about 277 to about 311 BHN and forming the tempered air cooled plate into plastic mold tooling. The claimed process provides cost savings over the Beguinot process '794 or Beguinot '846 process wherein a boron-containing hot rolled steel must be subjected to a "quenching heat treatment" (heated into its austenitic state followed by quenching) to obtain the desired microstructure (see Beguinot '794 at column 3, lines 8, 51-54; column 4, lines 46, 54-55; column 5, lines 18-20, 54-55; column 6, lines 54-55 and Beguinot '846 at column 4, lines 16, 48, 57-67; column 6, line 63; column 7, lines 36-38; column 8, lines 37, 44). The combinations of features recited

in Claim 19 and in the claims dependent thereon are not disclosed or suggested by Beguinot '794 or '846 in view of Henn.

Neither Beguinot '794 nor Beguinot '846 discloses hot leveling nor is there any disclosure in either Beguinot '794 or Beguinot '846 of free air cooling a hot leveled plate, tempering the air cooled plate and forming the air cooled plate into a plastic mold tooling. Instead, Beguinot '794 and Beguinot '846 state that the steel "must contain" boron to obtain "quenchability" and that before the rolled or forged steel is employed for mold manufacture the steel is subjected to "quenching heat treatment". As such, Beguinot '794 and Beguinot '846 teach away from the process recited in Claim 19 wherein a hot rolled and tempered plastic mold tool of a steel alloy is manufactured by hot rolling, hot leveling the hot rolled plate while it is still on the hot rolling mill, free air cooling the hot leveled plate, tempering the air cooled plate to a hardness of about 277 to about 311 BHN and forming the tempered air cooled plate into plastic mold tooling.

Henn (which relates to a martensitic stainless steel rather than a tool steel) does not cure the deficiencies of Beguinot '794 or Beguinot '846 as any modification of Beguinot '794 or Beguinot '846 which eliminates the "quenching heat treatment" goes against the teachings of these references. MPEP § 2145(X)(D). It is submitted that a person of ordinary skill in the art would not have looked to Henn's teachings of processing stainless steel for suggestions to go against the teachings of Beguinot '794 or Beguinot '846 which relate to low alloy steels (see Beguinot '794 at column 2, lines 31-32 and Beguinot '846 at column 1, line 6).

It is submitted that the differences between the claimed subject matter and the prior art are such that the claimed subject matter, as a whole, would not have been

obvious at the time the invention was made to a person having ordinary skill in the art.

In view of the foregoing, it is submitted that the present application is in condition for allowance and such action is earnestly solicited.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: January 22, 2006

By:

  
\_\_\_\_\_  
Peter K. Skiff  
Registration No. 31917

P.O. Box 1404  
Alexandria, VA 22313-1404  
703.836.6620